

REMARKS/ARGUMENTS

Favorable consideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 1-10 are pending in the application, with Claims 1-10 amended by the present amendment.

In the outstanding Office Action, Claims 2-7 were rejected under 35 U.S.C. § 112, second paragraph; Claims 1-10 were rejected under 35 U.S.C. § 102(b) as being anticipated by Iijima et al. (U.S. Patent No. 6,642,491, hereinafter Iijima).

Applicants acknowledge with appreciation the interview between the Examiner and Applicants' representative on February 3, 2005. During the interview the claimed inventions were reviewed with respect the originally filed specification and figures. The Examiner indicated that the rejection under 35 U.S.C. § 112, second paragraph, would be withdrawn.

As noted during the interview, the term "addition phase current measuring device" recited in Claim 2 is a label. Claims 1-10 are amended to more clearly describe and distinctly claim Applicants' invention. No new matter is added.

Briefly recapitulating, amended Claim 1 is directed to a driving control device for a motor having a plurality of multi-phase coils configured to generate a rotating magnetic field to cause a rotor to rotate. The driving control device includes a measuring device configured to measure one or more phase currents selected from a plurality of independent phase currents corresponding to the plurality of multi-phase coils. A number of phase currents being measured is limited to a range between one and a number smaller than a total number of the independent phase currents. The driving control device also includes a control signal generating circuit connected to the measuring device and configured to estimate a state of the motor by using the measured one or more phase currents and one of a motor model and a model showing a state of the motor. The control signal generating circuit is further

configured to generate a driving control signal based on said estimated state. The driving control signal is used by the driving control device to control each of the phase currents.

Independent Claim 2 is directed to an alternative embodiment which includes a measuring device configured to measure one or more addition phase currents selected from a plurality of addition phase currents. A number of phase currents being measured is limited to a range between one and a number smaller than a total number of addition phase currents. An addition phase current is an addition of phase currents of at least two of the plurality of multi-phase coils.

Iijima discloses a position sensorless motor control apparatus that measures phase currents and phase voltages. The number of phase currents and voltages measured by Iijima is equal to the total number of phases of the motor.<sup>1</sup> Iijima uses these measured values with a table to control the motor. However, Iijima fails to disclose or suggest a number of phase currents being measured that is limited to a range between one and a number smaller than a total number of the independent phase currents as recited in Claim 1. Iijima also fails to disclose or suggest any device configured to measure addition phase currents, let alone measuring a number of addition phase currents limited to a range between one and a number smaller than a total number of the addition phase currents as recited in Claim 2.

As Iijima fails to disclose or suggest all the elements of independent Claims 1 and 2, Applicants submit the inventions defined by Claims 1 and 2, and all claims depending therefrom, are not anticipated and are not rendered obvious by the asserted references for at least the reasons stated above.<sup>2</sup>

---

<sup>1</sup> Iijima, Figures 1-2.

<sup>2</sup> MPEP § 2142 "...the prior art reference (or references when combined) must teach or suggest **all** the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991)."

Application No. 10/627,774  
Reply to Office Action of November 18, 2004

Accordingly, in view of the present amendment and in light of the previous discussion, Applicants respectfully submit that the present application is in condition for allowance and respectfully request an early and favorable action to that effect.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,  
MAIER & NEUSTADT, P.C.

Customer Number

**22850**

Tel: (703) 413-3000  
Fax: (703) 413 -2220  
(OSMMN 06/04)



Norman F. Oblon  
Attorney of Record  
Registration No. 24,618  
Michael E. Monaco  
Registration No. 52,041

NFO/MEMO/kkn

I:\ATTY\MMAMENDMENT\0068\240878.AM.DUE FEB. 18..DOC